

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF HAWAII

In the Matter of )

PUBLIC UTILITIES COMMISSION )

Instituting a Proceeding to Investigate )  
the Implementation of Feed-in Tariffs )  
\_\_\_\_\_ )

DOCKET NO. 2008-0273

**RESPONSES OF  
ZERO EMISSIONS LEASING LLC  
TO ADDITIONAL INFORMATION REQUESTS  
OF PUBLIC UTILITIES COMMISSION**

**AND**

**CERTIFICATE OF SERVICE**

ERIK W. KVAM  
Chief Executive Officer  
Zero Emissions Leasing LLC  
2800 Woodlawn Drive, Suite 131  
Honolulu, Hawaii 96822  
Telephone: (808) 371-1475

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PUBLIC UTILITIES  
COMMISSION

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**RESPONSES OF ZERO EMISSIONS LEASING LLC  
TO ADDITIONAL INFORMATION REQUESTS  
OF PUBLIC UTILITIES COMMISSION**

ZERO EMISSIONS LEASING LLC ("Zero Emissions") respectfully submits the following responses to the Additional Information Requests ("IRs") of the PUBLIC UTILITIES COMMISSION (the "Commission") in the above-referenced proceeding:

**PUC/ZEL-IR-V-1**

Though their generation profiles differ, both wind and solar resources are intermittent and may cause system reliability problems at high penetrations. Would the cumulative amount of one of these technologies affect the amount of the other that can be reliably integrated?

**Response:** No.

**PUC/ZEL-IR-V-2**

Should any system caps for solar and wind be cumulative or independent of each other?

**Response:** Zero Emissions believes that its proposed system-wide penetration caps of 20% for solar and 25% for wind are sufficiently conservative that the caps should be independent of each other.

**PUC/ZEL-IR-V-3**

Please describe the annual degradation factor that your company estimates for solar PV technology. What is the basis for this degradation factor?

**Response:** Zero Emissions estimates an annual degradation factor of .5% for solar PV technology. *See, e.g., D.L. King, M.A. Quintana, J.A. Kratochvil, D.E. Ellibee and B.R. Hansen, "Photovoltaic Module Performance and Durability Following Long-Term Field Exposure," Progress in Photovoltaics Research and Applications (July-August 2000) pp. 241-256 (.5% per year performance loss for multicrystalline module continuously exposed outdoors on open circuit configuration for 8 years at Sandia National Laboratory).*

**PUC/ZEL-IR-V-4**

Is .77 an accurate DC to AC derate factor for solar PV technology in Hawaii? If not, what is the appropriate derate factor?

**Response:** .77 is a reasonable DC to AC derating factor for solar PV technology in Hawaii.

**PUC/ZEL-IR-V-5**

What is the degradation factor for solar PV systems in Hawaii? Please provide the basis for this estimate.

**Response:** *See Zero Emissions' Response to PUC/ZEL-IR-V-3, supra.*

\* \* \* \*

DATED: Honolulu, Hawaii, March 30, 2009

  
Erik Kvam  
Chief Executive Officer  
Zero Emissions Leasing LLC

CERTIFICATE OF SERVICE

I hereby certify that I have this date filed and served the original and eight copies of the foregoing **RESPONSES OF ZERO EMISSIONS LEASING LLC TO ADDITIONAL INFORMATION REQUESTS OF PUBLIC UTILITIES COMMISSION** in Docket No. 2008-0273, by hand delivery to the Commission at the following address:

CARLITO CALIBOSO  
PUBLIC UTILITIES COMMISSION  
465 S. King Street, Suite 103  
Honolulu, HI 96813

I hereby further certify that I have this date served two copies upon the following party of the foregoing **RESPONSES OF ZERO EMISSIONS LEASING LLC TO ADDITIONAL INFORMATION REQUESTS OF PUBLIC UTILITIES COMMISSION** in Docket No. 2008-0273, by causing such copies to be mailed, postage prepaid, and properly addressed to each such party as follows:

CATHERINE P. AWAKUNI  
DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS  
DIVISION OF CONSUMER ADVOCACY  
P.O. Box 541  
Honolulu, HI 96809

I hereby further certify that I have this date served one copy upon each of the following parties, of the foregoing **RESPONSES OF ZERO EMISSIONS LEASING LLC TO ADDITIONAL INFORMATION REQUESTS OF PUBLIC UTILITIES COMMISSION** in Docket No. 2008-0273, by causing each such copy thereof to be sent via e-mail in a portable document format ("pdf") to each such party as follows:

DARCY L. ENDO-MOTO  
VICE PRESIDENT  
GOVERNMENT & COMMUNITY AFFAIRS  
HAWAIIAN ELECTRIC COMPANY, INC.



P.O. Box 2750  
Honolulu, HI 96840-0001

DEAN MATSUURA  
DIRECTOR, REGULATORY AFFAIRS  
HAWAIIAN ELECTRIC COMPANY, INC.  
P.O. Box 2750  
Honolulu, HI 96840-0001

JAY IGNACIO  
PRESIDENT  
HAWAII ELECTRIC LIGHT COMPANY, INC.  
P.O. Box 1027  
Hilo, HI 96721-1027

EDWARD L. REINHARDT  
PRESIDENT  
MAUI ELECTRIC COMPANY, LIMITED  
P.O. Box 398  
Kahului, HI 96733-6898

THOMAS W. WILLIAMS, JR., ESQ.  
PETER Y. KIKUTA, ESQ.  
DAMON L. SCHMIDT, ESQ.  
GOODSILL ANDERSON QUINN & STIFEL  
Alii Place, Suite 1800  
1099 Alakea Street  
Honolulu, HI 96813

ROD S. AOKI, ESQ.  
ALCANTAR & KAHL LLP  
120 Montgomery Street, Suite 2200  
San Francisco, CA 94104

Attorneys for HAWAIIAN ELECTRIC COMPANY, INC.,  
MAUI ELECTRIC COMPANY, LIMITED and  
HAWAII ELECTRIC LIGHT COMPANY, INC.

MARK J. BENNETT, ESQ.  
DEBORAH DAY EMERSON, ESQ.  
GREGG J. KINKLEY, ESQ.  
DEPARTMENT OF THE ATTORNEY GENERAL  
425 Queen Street  
Honolulu, HI 96813

Counsel for DEPARTMENT OF BUSINESS, ECONOMIC  
DEVELOPMENT AND TOURISM

CARRIE K.S. OKINAGA, ESQ  
GORDON D. NELSON, ESQ.  
DEPARTMENT OF CORPORATION COUNSEL  
CITY AND COUNTY OF HONOLULU  
530 S. King Street, Room 110  
Honolulu, HI 96813

Counsel for the CITY AND COUNTY OF HONOLULU

LINCOLN S.T. ASHIDA, ESQ.  
WILLIAM V. BRILHANTE, JR., ESQ.  
MICHAEL J. UDOVIC  
DEPARTMENT OF THE CORPORATION COUNSEL  
COUNTY OF HAWAII  
101 Aupuni Street, Suite 325  
Hilo, HI 96720

Counsel for the COUNTY OF HAWAII

HENRY Q. CURTIS  
KAT BRADY  
LIFE OF THE LAND  
76 North King Street, Suite 203  
Honolulu, HI 96817

CARL FREEDMAN  
HAIKU DESIGN & ANALYSIS  
4324 Hana Highway  
Haiku, HI 96708

WARREN S. BOLLMEIER II  
PRESIDENT  
HAWAII RENEWABLE ENERGY ALLIANCE  
46-040 Konane Place, # 3816  
Kaneohe, HI 96744

DOUGLAS A. CODIGA, ESQ.  
SCHLACK ITO LOCKWOOD PIPER & ELKIND  
Topa Financial Center  
745 Fort Street, Suite 1500  
Honolulu, HI 96813

Counsel for BLUE PLANET FOUNDATION

MARK DUDA  
PRESIDENT  
HAWAII SOLAR ENERGY ASSOCIATION  
P.O. Box 37070  
Honolulu, HI 96837

RILEY SAITO  
THE SOLAR ALLIANCE  
73-1294 Awakea Street  
Kailua-Kona, HI 96740

JOEL K. MATSUNAGA  
HAWAII BIOENERGY, LLC  
737 Bishop Street, Suite 1860  
Pacific Guardian Center, Mauka Tower  
Honolulu, HI 96813

CLIFFORD SMITH  
MAUI LAND & PINEAPPLE COMPANY, INC.  
P.O. Box 187  
Kahului, HI 96733-6687

KENT D. MORIHARA, ESQ.  
KRIS N. NAKAGAWA, ESQ.  
SANDRA L. WILHILDE, ESQ.  
MORIHARA LAU & FONG LLP  
841 Bishop Street, Suite 400  
Honolulu, HI 96813

Counsel for HAWAII BIOENERGY, LLC  
MAUI LAND & PINEAPPLE COMPANY, INC.

THEODORE E. ROBERTS  
SEMPRA GENERATION  
101 Ash Street, HQ 10  
San Diego, CA 92101-3017

JOHN N. REI  
SOPOGY, INC.  
2660 Waiwai Loop  
Honolulu, HI 96819

GERALD A. SUMIDA, ESQ.  
TIM LUI-KWAN, ESQ.  
NATHAN C. NELSON, ESQ.  
CARLSMITH BALL LLP  
ASB Tower, Suite 2200  
1001 Bishop Street  
Honolulu, HI 96813

Counsel for HAWAII HOLDINGS, LLC, dba FIRST WIND HAWAII

CHRIS MENTZEL  
CHIEF EXECUTIVE OFFICER  
CLEAN ENERGY MAUI LLC  
619 Kupulau Drive  
Kihei, HI 96753

HARLAN Y. KIMURA, ESQ.  
Central Pacific Plaza  
220 South King Street, Suite 1660  
Honolulu, HI 96813

Counsel for TAWHIRI POWER LLC

SANDRA-ANN Y.H. WONG, ESQ.  
ATTORNEY AT LAW, A LAW CORPORATION  
1050 Bishop Street #514  
Honolulu, HI 96813

Counsel for ALEXANDER & BALDWIN, INC., through  
its division, HAWAIIAN COMMERCIAL & SUGAR COMPANY

DATED: Honolulu, Hawaii, March 30, 2009

  
ERIK KVAM